REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated June 2, 2006 (U.S. Patent Office Paper No. 20060523). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1-22 stand for consideration in this application, wherein claims 1, 3, 4, 10 and 12 are being amended to correct formal errors and to more particularly point out and distinctly claim the subject invention. In addition, new claims 14-22 are hereby submitted for consideration.

Additional Amendments

The specification is being amended to correct formal errors and to better disclose and describe the features of the present invention as claimed. All amendments to the application are fully supported therein, including page 6, lines 12-15 and page 13, lines 20-22 of the specification. Applicant hereby submits that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

The First 35 U.S.C. §103(a) rejection

Claims 1-4, and 8-13 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Elings et al. (US Pat. 5,418,363) in view of Matsumoto et al. (US Pat. 5,723,227). This rejection is respectfully traversed for the reasons set forth below.

According to the Manual of Patent Examining Procedure (M.P.E.P. §2143),

> To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make

the claimed combination and the reasonable expectation of success must both not found in the prior art, not in the applicant's disclosure.

Furthermore, referring to *In re Fulton*, M.P.E.P. §2143. 01 I sets forth as follows:

The court emphasized that the proper inquiry is "whether there is something in the prior art as a whole to suggest the desirability, and thus obviousness, of course, of making the combination," not whether there is something in the prior art as a whole to suggest that the combination is the most desirable combination available.

Furthermore, referring to In re Mills, M.P.E.P. §2143. 01 III sets forth as follows:

The mere fact that reference can be combines or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

Claim 1

The Examiner alleged that Elings teaches a magnetization control method, thatcomprises: providing at least one metal probe; and providing an electric field between said at least one metal probe and a surface to become the height of the potential barrier effectively high or low compared with a reference value, except that Elings does not teach a trilayer substrate and the electric filed used to record information to the disk. The Examiner further alleged that Matsumoto teaches a trilayer magnetic medium, and that it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Elings' invention with the teaching of Matsumoto in order to be able to record data according to multifilm layers in order to obtain an efficient resolution, because it is obvious that when recording a magnetooptic medium a laser which is an alternate electric field is used to emit the specified wavelength to record marks or spots in the medium pertaining to data. Applicant respectfully disagrees.

Claim 1 now recites that a magnetization control method comprises: providing at least one metal probe; providing on a substrate a multilayer film including a first ferromagnetic metallic layer, a non-magnetic metallic middle layer formed on the first ferromagnetic metallic layer, and a second ferromagnetic metallic layer formed on the non-magnetic metallic middle layer and located facing said at least one metal probe; controlling the distance between said at least one metal probe and said multilayer film at a range from approximately 0 nm to approximately 10 nm; and providing an electric field between said at least one metal probe and said multilayer film to set the height of the potential barrier effectively high or low compared with a reference value so as to change the energies of quantum well states formed

in the multilayer film, which results in recording information to the multilayer film by changing at least one direction of magnetization of said ferromagnetic metallic layers.

A quantum well level may be formed in a non-magnetic metallic thin film where a combination of ferromagnetic metal and non-magnetic metal is provided. (Page, 6, lines 7-9 of the specification) When the magnetic exchange interaction J is positive, in a relative direction of magnetization of the ferromagnetic metallic layers 1 and 3, a state in parallel but in the opposite directions is stable, and when J is negative, a state in parallel and in the same direction is stable. A work function of the surface of the multilayer film, a distance between the metal probe 5 and the surface of the multilayer film 41, and the electric field are changed, whereby it is possible to set the height of a potential barrier on the surface of the multilayer film to a suitable value equal to or higher than 0 eV. By changing the distance and the electric field between the metal probe 5 and the surface of the multilayer film 41, the shape of potential on the surface of the ferromagnetic metallic layer 3 is changed, whereby it is possible to make the magnetic exchange interaction J exerting between the ferromagnetic metallic layers 1 and 3 positive or negative, and a change in exchange connection energy of about 0.1 mJ/m^2 sufficiently exceeds a coercive force of magnetization of the ferromagnetic metallic layer 3. In other words, it can be said that relative directions of magnetization of the ferromagnetic metallic layers 1 and 3 can be sufficiently rewritten by the metal probe 5. (Page 14, line 19 – Page 15, line 14 of the specification)

In contrast, Elings merely shows producing an electric field between the probe tip and the sample to create an attractive force between the tips and the sample of which the surface is to be scanned. (col. 10, lines 11-21) As the Examiner admitted, Elings does not show a multilayer film comprising ferromagnetic metal and non-magnetic metal as a sample to be measured. This means quantum well levels do not exist in Elings' sample, and therefore Elings does not consider the quantum well level. In other words, Elings cannot and does not show or suggest providing an electric field between the probe tip and the sample so as to change the energies of quantum well states formed in the sample.

Matsumoto merely shows a magneto-optical recording medium on which the information is recorded by magnetization writing. Matsumoto shows a magnetic reproducing layer/magnetic control layer/magnetic recording layer. However, Matsumoto says nothing about controlling magnetization for recording information by applying an electric field.

Furthermore, Elings is directed to an apparatus and a method for scanning a probe over a surface to produce a measurement of the surface representative of a parameter other

than the topography of the surface. Clearly, Elings does not explicitly or implicitly suggest the desirability of recording information on a multi-layer film. Therefore, the mere fact that Elings and Matsumoto can be combined or modified does not render the resultant combination obvious.

In sum, there is no suggestion or motivation in either Elings or Matsumoto to combine these features explicitly or implicitly, or in the knowledge generally available to one of ordinary skill in the art at the time the invention was made to embody all the features of the invention as recited in claim 1. Accordingly, claim 1 is not obvious in view of all the prior art.

Claims 3, 4, 10

Claim 3, 4, and 10 have the substantially same features as those of claim 1. As such, the arguments set forth above are equally applicable here. Claim 1 being allowable, claims 3, 4, and 10 must also be allowable.

Claims 2, 8-9, 11-13

As to dependent claims 2, 8-9, and 11-13, the arguments set forth above with respect to independent claim 1, 3, 4, and 10 are equally applicable here. The corresponding base claims being allowable, claims 2, 8-9, and 11-13 must also be allowable.

The Second 35 U.S.C. §103(a) rejection

Claim 5 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Elings in view of Matsumoto, as applied to claim 4 above, and further in view of Oumi et al. (US Pat. 6,473,384).

As to dependent claim 5, the arguments set forth above with respect to the combination of Elings and Matsumoto are equally applicable here. Oumi says nothing about the elements that the combination of Elings and Matsumoto fails to show. Accordingly, claim 5 is not obvious over in view of all the prior art cited.

The Third 35 U.S.C. §103(a) rejection

Claim 6 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over the combination of Elings, Matsumoto, and Oumi, as applied to claim 5, and further in view of Gill (US Pat. 6,650,512).

As to dependent claim 6, the arguments set forth above with respect to the combination of Elings and Matsumoto are equally applicable here. Oumi and Gill say nothing about the elements that the combination of Elings and Matsumoto fails to show. Accordingly, claim 6 is not obvious in view of all the prior art cited.

The Fourth 35 U.S.C. §103(a) rejection

Claim 7 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Elings in view of Matsumoto, as applied to claim 4, and further in view of Kobayashi (US Pat. 6,687,200).

As to dependent claim 7, the arguments set forth above with respect to the combination of Elings and Matsumoto are equally applicable here. Kobayashi says nothing about the elements that the combination of Elings and Matsumoto fails to show. Accordingly, claim 7 is not obvious in view of all the prior art cited.

Conclusion

In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

Stanley P. Fisher
Registration Number 24,344

Juan Carlos A. Marquez
Registration Number 34,072

REED SMITH LLP
3110 Fairview Park Drive
Suite 1400
Falls Church, Virginia 22042
(703) 641-4200

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